

REMARKS / DISCUSSION OF ISSUES

Claims 1-20 are pending in the application; claims 12-20 are newly added.

The applicants thank the Examiner for acknowledging the claim for priority and receipt of certified copies of all the priority documents, and for determining that the drawings are acceptable.

Claims are amended for non-statutory reasons, to remove figure label numbers. The claims are not narrowed in scope and no new matter is added.

The Office action rejects claim 11 under 35 U.S.C. 101. The applicants respectfully traverse this rejection.

The Office action asserts that claim 11 addresses nonfunctional descriptive material. The applicants respectfully disagree with this assertion. MPEP 2106.01 states:

Descriptive material can be characterized as either "functional descriptive material" or "nonfunctional descriptive material." In this context, "functional descriptive material" consists of data structures and computer programs which impart functionality when employed as a computer component... "Nonfunctional descriptive material" includes but is not limited to music, literary works, and a compilation or mere arrangement of data."

The applicants clearly teach that the claimed embedded data serves the function of allowing a processor to remove the distortion that is introduced to the host signal. This embedded data forms an essential component of an error-correcting processing system, because without this embedded data, the processing system is unable to achieve this functionality. The applicants also note that this functionality clearly produces a useful result in that it provides a distortion-free copy of the host signal.

Because the media of claim 11 includes "data structures ... [that] impart functionality when employed as a computer component", the applicants respectfully maintain that the rejection of claim 11 under 35 U.S.C. 101 should be withdrawn.

The Office action rejects claims 1-5, 7-9, and 11 under 35 U.S.C. 102(e) over Tian et al. (USP 7,277,468, hereinafter Tian). The applicants respectfully traverse this rejection.

MPEP 2131 states:

"A claim is anticipated only if *each and every element* as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). "The *identical invention* must be shown in as *complete detail* as is contained in the ... claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

Tian fails to teach using a portion of embedding rate to accommodate restoration data identifying the host signal conditioned on a composite signal; and fails to teach using the remaining embedding rate for embedding said auxiliary data, as specifically claimed in claim 1, upon which claims 2-5 depend.

Tian fails to teach embedded data comprising restoration data that identifies the distortion of a host signal, as specifically claimed in claims 7 and 11.

With regard to claim 1, the Office action asserts that "the bandwidth of the selected frequency coefficients [of Tian] is equivalent to the [claimed] embedding rate". The applicants respectfully disagree with this assertion. As is well known in the art, and consistent with its use in the applicants' specification, an embedding rate specifies the amount of data that can be embedded for a given amount of symbols, based on the entropy of the symbol encoding process. A bandwidth, on the other hand, specifies an amount of data that can be communicated during a given amount of time.

The Office action notes that Tian's bandwidth includes low frequency coefficients and mid-high frequency components, and that a calibration signal comprises low frequency coefficients, and concludes therefrom that Tian's low frequency coefficients correspond to "using a portion of said embedding rate to accommodate restoration data", and Tian's high frequency coefficients correspond to "using the remaining embedding rate for embedding said auxiliary data". The applicants respectfully maintain that one of skill in the art would not consider the fact

that different frequency coefficients exist within a bandwidth to be equivalent to embedding two distinct sets of data, as claimed.

The Office action fails to specifically identify where Tian teaches restoration data that identifies the host signal conditioned on the composite signal. The Office action asserts that Tian's "calibration signal that measures the watermark strength contains the restoration data", but provides no basis for this assertion. As the Office action notes, Tian teaches a calibration signal that serves to measure the watermark strength; however, Tian does not teach that this calibration signals also contains restoration data that identifies the distortion/conditioning of the host signal.

Because Tian fails to teach each of the elements of claim 1, the applicants respectfully maintain that the rejection of claims 1-5 under 35 U.S.C. 102(e) over Tian should be withdrawn.

With regard to claims 7 and 11, the Office action maintains that Tian's calibration signal corresponds to the claimed restoration data. However, the applicants respectfully note that Tian does not teach that Tian's calibration signal identifies the distortion of the host signal. As Tian teaches:

"the calibration signal comprises an array of impulse or delta functions scattered in a pattern in the Fourier domain of each block of image samples. To embed the pattern, the embedder perceptually adapts the calibration signal to the host image block and adds it to that block. The impulse functions of the calibration signal have a pre-defined magnitude and pseudo-random phase." (Tian, column 3, lines 59-65).

Because Tian's calibration signal includes pre-defined and random information, independent of the host signal to which the calibration signal is being embedded, Tian's calibration signal cannot be said to identify the distortions of a host signal, as specifically claimed in each of claims 7 and 11. Accordingly, the applicants respectfully maintain that the rejection of claims 7-9 and 11 under 35 U.S.C. 102(e) over Tian should be withdrawn.

The Office action rejects claims 6 and 10 under 35 U.S.C. 102(e) over Rhoads et al. (USP 6,614,914, hereinafter Rhoads). The applicants respectfully traverse this rejection.

Rhoads fails to teach restoration data identifying the host signal conditioned on the composite signal, as specifically claimed in claim 6.

Rhoads fails to teach reconstruction means for reconstructing the host signal using the reconstruction data, as specifically claimed in claim 10.

With regard to claim 6, the Office action asserts that Rhoads teaches restoration data identifying the host signal conditioned on the composite signal at column 8, lines 50-65, and column 9, lines 35-55. The applicants respectfully disagree with this assertion. At the cited text, Rhoads addresses reconstruction data that facilitates the reconstruction of a message within a watermark; Rhoads does not address reconstruction data that identifies features of the host signal, and specifically does not address reconstruction data that identifies the conditioning of the host signal on the composite signal. Accordingly, the applicants respectfully maintain that the rejection of claim 6 under 35 U.S.C. 102(e) over Rhoads should be withdrawn.

With regard to claim 10, the Office action asserts that Rhoads teaches reconstruction means for reconstructing the host signal using the reconstruction data in the composite signal at column 8, lines 50-68 and column 9, lines 1-25. The applicants respectfully disagree with this assertion. At the cited text, Rhoads addresses reconstructing a message within a watermark; Rhoads does not address reconstructing the host signal, and specifically does not address reconstruction means for reconstructing the host signal using the reconstruction data in the composite signal. Accordingly, the applicants respectfully maintain that the rejection of claim 10 under 35 U.S.C. 102(e) over Rhoads should be withdrawn.

In view of the foregoing, the applicants respectfully request that the Examiner withdraw the rejections of record, allow all the pending claims, and find the application to be in condition for allowance. If any points remain in issue that may best be resolved through a personal or telephonic interview, the Examiner is respectfully requested to contact the undersigned at the telephone number listed below.

Respectfully submitted,

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